



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,088	01/31/2001	Gadi Inon	Q61007	1057

7590 08/28/2003

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3213

[REDACTED] EXAMINER

CHOW, MING

ART UNIT	PAPER NUMBER
2645	7

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/774,088	INON ET AL.	
	Examiner	Art Unit	
	Ming Chow	2645	
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>			
Period for Reply			
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.			
<ul style="list-style-type: none"> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). - Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). 			
Status			
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>13 June 2003</u> .			
2a) <input checked="" type="checkbox"/> This action is FINAL. 2b) <input type="checkbox"/> This action is non-final.			
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.			
Disposition of Claims			
4) <input checked="" type="checkbox"/> Claim(s) <u>1-50</u> is/are pending in the application.			
4a) Of the above claim(s) _____ is/are withdrawn from consideration.			
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.			
6) <input checked="" type="checkbox"/> Claim(s) <u>1-50</u> is/are rejected.			
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.			
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.			
Application Papers			
9) <input type="checkbox"/> The specification is objected to by the Examiner.			
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).			
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.			
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.			
Priority under 35 U.S.C. §§ 119 and 120			
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.			
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.			
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.			
Attachment(s)			
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)		4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .	
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)	
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .		6) <input type="checkbox"/> Other: _____ .	

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 44 recites the limitation "the pronunciation". There is insufficient antecedent basis for this limitation in the claim.
2. Claim 46 recites the limitation "the personal database". There is insufficient antecedent basis for this limitation in the claim.
3. Claim 50 recites the limitation "the internet". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2645

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7, 9, 12, 13, 15, 17, 19-21, 23-33, 35-38, 40-46, 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al (US: 6381324), and in view of Applebaum et al (US: 6463413).

For claims 1, 9, 29, 36, 45, 46, 48, 49 regarding a first application unit operable to host the telephone network-based system, Shaffer et al teach on item 213 Fig. 2 call processing center. The call processing center of Shaffer et al is the claimed telephone network-based system. There must be an application (the claimed first application) to host the telephone network-based system.

Regarding “a second....address book”, Shaffer et al teach on item 202 Fig. 2 calling location A. There must be an application (the claimed second application) to present the user (by computer or FAX or telephone of item 202) with contact information.

Regarding “a voice response....application unit”, Shaffer et al teach on item 214 Fig. 2 VRU.

Shaffer et al failed to teach “a recognition server....convert....to a text form”. However, Applebaum et al teach on column 3 line 16-17 “alphanumeric text for the spoken name provided by the speech recognizer”.

Regarding “the text form of the new contact name forms part of the user-initiated call”, Shaffer et al teach on Abstract – connect the caller (reads on claimed “name forms part of the user-initiated call”) by using the input (spoken name) received by the VRU and recognized by the voice recognition.

Art Unit: 2645

Regarding “a storage unit.....recognition server, Shaffer et al teach on Column 21 Line 11 a directory assistance type of application. There must be a storage unit to store the directory information. The directory information is textual information for visual display (by computer or FAX or telephone of item 202 Fig. 2)

Shaffer et al failed to teach “a comparison.....textual directory”. However, Applebaum et al teach on column 3 line 12-14 the speech recognizer (claimed “comparison unit”) retrieves the alphanumeric text (including either alphabetical text or numerical text) for the word that matches (reads on the claimed “comparison”) the input speech data.

Shaffer et al failed to teach “a textual directory.....contact name”. However, Applebaum et al teach on column 3 line 15-17 application (claimed “textual directory unit”) locates the contact data based on the text form of name.

Regarding “the selected contact data is inserted into the personal address book associated with the user”, Shaffer et al also teach on Column 14 Line 46 the captured telephone number andthat updates the master table. The “update” of Shaffer is the claimed “inserted”. The master table of Shaffer et al is the claimed “personal address book”.

It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al to have “a recognition server.....convert.....to a text form”, “a comparison.....textual directory”, and “a textual directory.....contact name” as taught by Applebaum et al such that the modified system of Shaffer et al would be able to support the recognition server, comparison unit, and textual directory unit to the system users.

Regarding claim 7, Shaffer et al teach on item 213 Fig. 2 call processing center (the claimed application) and item 231 Fig. 2 remote database location (the claimed storage unit).

Regarding claim 12, Shaffer et al teach on item 205 Fig. 2 the calling into the system by the user.

Regarding claim 13, Shaffer et al teach on item 214 Fig. 2 VRU. It is inherent that the VRU must route the call to the system.

Regarding claim 15, Shaffer et al teach on ABSTRACT “the VRU to speak selected retrieved information to the caller”. The “speak” of Shaffer et al reads on the claimed “vocalized”. The “retrieved information” of Shaffer et al is the claimed “number”.

Regarding claim 17, Shaffer et al teach on item 214 Fig. 2 VRU. It is inherent that the textual directory must be loaded by the application (item 213 Fig. 2 of Shaffer et al) from the storage unit (item 231 Fig. 2 of Shaffer et al) to the recognition server in order to be presented to the user at item 202 Fig. 2 of Shaffer et al.

Regarding claim 19, Shaffer et al teach on ABSTRACT “needs to be verified by the caller. The “to be verified by the caller” is the claimed “user to approve”. It is inherent that the user must approve the name when verifying the retrieved information (telephone number of Shaffer et al; see Column 24 Line 10) that associates with the name.

Regarding claim 20, Shaffer et al teach on item 207 Fig. 202 computer. It is inherent that the user must approve textual data when the retrieved information is presented to the user on the computer.

Regarding claim 21, Shaffer et al teach on item 242 Fig. 2 Internet Server.

Regarding claim 23, Shaffer et al teach on Column 21 Line 11 a directory assistance type of application. It is inherent that there must be a directory server.

Regarding claim 24, it is inherent that the textual directory of Shaffer's system is a (computer) file.

Regarding claim 25, Shaffer et al teach on item 231 Fig. 2 database. It is inherent that the database of Shaffer et al is the claimed virtual memory source.

Regarding claim 26, Shaffer et al teach on item 231 Fig. 2 database. It is inherent that the database is the claimed management system.

Regarding claim 27, Shaffer et al teach on Column 21 Line determine the telephone number(s) for that address and the other individuals living at that address. It is inherent that the

names of other individuals must be transferred by the system from the storage unit to ASR as a transcription.

Regarding claim 28, Shaffer et al teach on Column 12 Line 28 connects the caller to the closest servicing location or the one selected by the caller. It is inherent that there must be at least two versions of matching name found to be selected by the user.

Regarding claims 30 and 41, Shaffer et al teach on Column 21 Line 11 other individuals. The other individuals of Shaffer et al is the claimed “contact’s name”. It is inherent that the contact name is a pronunciation when the VRU is used to present the retrieved information.

Regarding claims 31 and 37, Shaffer et al teach on Column 55 Line 46 capturing the first party identifier comprises capturing information from a voice recognition unit. The voice recognition unit of Shaffer et al is the claimed speech recognizer. The “first party identifier” of Shaffer et al is the claimed “recorded pronunciation”.

Regarding claims 32 and 42, Shaffer et al teach on Column 21 Line 10 determine the telephone number(s).

Regarding claims 33, 38, and 43, it is inherent that the name retrieved from the database (the claimed text name) must be processed by the speech recognizer (Column 55 Line 46) before it can be presented to the user at item 205 Fig. 2 of Shaffer et al.

Regarding claims 35 and 40, Shaffer et al teach on item 840 Fig. 18C “compare MT_REC_PHONE to DPU_LIST(1)_PHONE”. The “compare” of Shaffer et al is the claimed “verify”. The MT_REC_PHONE of Shaffer et al is the claimed “stored selected entry”. The “DPU_LIST(1)_PHONE” is the claimed “new contact”.

Regarding claim 44, all rejections as stated in claims 9, 10, 16 above apply.

Regarding claim 50, Shaffer et al teach on item 242 Fig. 3 “internet server”.

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al and Applebaum et al as applied to claim 1 above, and in view of S. Shaffer et al (US-PAT-NO: 5,950,165; herein referred as S_Shaffer).

Regarding claim 2, Shaffer et al and Applebaum et al failed to teach said application unit, said voice response unit, said recognition unit and said persistence storage unit are each hosted on different physical units. However, S_Shaffer et al teach on Fig. 1 application unit (item 102 Fig. 1 of S_Shaffer et al), voice response unit, recognition unit, and storage unit (item 106 Fig. 2 of S_Shaffer) are hosted on different physical units. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have said application unit, said voice response unit, said recognition unit and said persistence storage unit

Art Unit: 2645

are each hosted on different physical units as taught by S_Shaffer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the different physical units to the system users.

Regarding claim 3, Shaffer et al and Applebaum et al failed to teach said application unit, said voice response unit, said recognition unit and said persistence storage unit are each hosted on the same physical units. However, S_Shaffer et al teach on Fig. 1 the said application unit, said voice response unit, said recognition unit and said persistence storage unit are each hosted on the same physical units (item 100 Fig. 1 of S_Shaffer). It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have said application unit, said voice response unit, said recognition unit and said persistence storage unit are each hosted on the same physical units as taught by S_Shaffer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the same physical units to the system users.

Regarding claim 4, Shaffer et al and Applebaum et al failed to teach two of the group comprising the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units. However, S_Shaffer et al teach on Fig. 1 the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units. it is inherent that the configurations of Fig.1 of S_Shaffer et al can be duplicated for a second group as described by Fig. 2A of the disclosed specification. The second group of S_Shaffer's system reads the claimed

“two of the group”. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have two of the group comprising the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units as taught by S_Shaffer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the two of the group units to the system users.

Regarding claim 5, Shaffer et al and Applebaum et al failed to teach three of the group comprising the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units. However, S_Shaffer et al teach on Fig. 1 the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units. It is inherent that the configurations of Fig.1 of S_Shaffer et al can be duplicated for a third group as described by Fig. 2A of the disclosed specification. The third group of S_Shaffer’s system reads the claimed “two of the group”. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have three of the group comprising the said application unit, said voice response unit, said recognition unit and said persistence storage unit are hosted on different physical units as taught by S_Shaffer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the three of the group units to the system users.

Art Unit: 2645

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al and Applebaum et al as applied to claim 1 above, and in view of Skladman et al (US-PAT-NO: 6,438,215). Shaffer et al and Applebaum et al failed to teach a firewall. However, Skladman et al teach on item 71 Fig. 1a firewall server. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have a firewall as taught by Skladman et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the firewall to the system users.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al and Applebaum et al as applied to claim 1 above, and in view of Porter (US-PAT-NO: 6,282,270). Shaffer et al and Applebaum et al failed to teach telephone network is comprised of at least one element each from the group including E1 components, T1 components, voice over Internet protocol components and any other telephony connection. However, Porter teaches on Column 4 Line 43 T1 or E1 digital trunk. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have telephone network is comprised of at least one element each from the group including E1 components, T1 components, voice over Internet protocol components and any other telephony connection as taught by Porter such that the modified system of Shaffer et al and Applebaum et al would be able to support the T1 and E1 to the system users.

Art Unit: 2645

8. Claims 10, 11, 16, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al and Applebaum et al as applied to claim 1 above, and in view of Cheston et al (US-PAT-NO: 6,330,308).

Regarding claim 10, Shaffer et al and Applebaum et al failed to teach recording of the pronunciation comprises recording of the name and the number of the new contact. However, Cheston et al teach on Column 3 Line 63 the PED provides subscribers the ability to store names and numbers through audio signals which are preferably the subscriber's voice. The "store" of Cheston et al is the claimed "recording". It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have recording of the pronunciation comprises recording of the name and the number of the new contact as taught by Cheston et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the recording of name and number to the system users.

Regarding claim 11, the modified Shaffer's system in view of Applebaum et al and Cheston as stated in claim 10 above further failed to teach obtaining is from said recording of said pronunciation of said number. However, Cheston et al teach on Column 4 Line 3 the subscriber then may access his PED remotely from any DTMF telephone and have a requested name and number. The "access" of Cheston is the claimed "obtaining". It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al, Applebaum et al and Cheston et al to have obtaining is from said recording of said pronunciation of said number as taught by Cheston et al such that the modified system of Shaffer et al, Applebaum et al and Cheston would be able to support the obtaining from said recording to the system users.

Regarding claim 16, Shaffer et al and Applebaum et al failed to teach the converting of said name and telephone number from speech to text form by said recognition server. However, Cheston et al teach on Column 3 Line 66 the PED subscriber accesses a voice response unit (VRU), and adds an entry by speaking the first four letters of the name to be stored followed by speaking the full name. It is inherent that the VRU must convert the name and telephone number from speech to text form. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have the converting of said name and telephone number from speech to text form by said recognition server as taught by Cheston et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the converting to the system users.

Regarding claim 47, all rejections as stated in claims 11 and 12 above apply.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al as applied to claim 9 above, and in view of Applebaum et al and S. Shaffer et al (US-PAT-NO: 5,950,165). Shaffer et al and Applebaum et al failed to teach obtaining is from a Web-based device coupled to the system, wherein said coupling is to a recognition server via an application unit. However, S_Shaffer et al teach on item 502 Fig. 5 computer system. The computer system of S_Shaffer et al is the claimed Web-based device. S_Shaffer et al also teach on items 518 and 508 of Fig. 5 voice recognition and application. It is inherent that the VRU must convert the name and telephone number from speech to text form. It would have been obvious to one skilled

at the time the invention was made to modify Shaffer et al and Applebaum et al to have obtaining is from a Web-based device coupled to the system, wherein said coupling is to a recognition server via an application unit as taught by S_Shaffer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the Web-based device to the system users.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al as applied to claim 9 above, and in view of Applebaum et al and Swan et al (US-PAT-NO: 6,351,222). Shaffer et al and Applebaum et al failed to teach training said ASR based on said associated textual data. However, Swan et al teach on Column 1 Line 45 train the voice recognition software. The voice recognition software of Swan et al is the claimed ASR. It is inherent that textual data must be generated (as described by applicant's specification line 10-14 page 7) for training. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have the training said ASR based on said associated textual data as taught by Swan et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the training to the system users.

11. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al as applied to claim 9 above, and in view of Applebaum et al and Dauerer et al (US-PAT-NO: 6,311,177). Shaffer et al and Applebaum et al failed to teach the source of said at least one textual directory is an intranet. However, Dauerer et al teach on Column 1 Line 56 ability to access directories or databases. The directories or databases of Dauerer is the claimed textual

directory. Dauerer et al also teach on Column 2 Line 2 an intranet. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have the source of said at least one textual directory is an intranet as taught by Dauerer et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the intranet to the system users.

12. Claims 34 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer et al as applied to claim 33 above, and in view of Applebaum et al and Vysotsky et al (US-PAT-NO: 5,719,921). Shaffer et al and Applebaum et al failed to teach the selected entry is selected based on a match between the recorded pronunciation and the text name in the selected entry. However, Vysotsky et al teach on Column 10 Line 37 the customer is played a confirmation message the recording of the name associated in the databaseto identify the name John in the received speech. The "name ... in the received speech" of Vysotsky is the claimed "recorded pronunciation". It is inherent that the "recording of the name associated in the database" must be the claimed text name when the name is stored in the database. It would have been obvious to one skilled at the time the invention was made to modify Shaffer et al and Applebaum et al to have the selected entry is selected based on a match between the recorded pronunciation and the text name in the selected entry as taught by Vysotsky et al such that the modified system of Shaffer et al and Applebaum et al would be able to support the match between recorded pronunciation and the text name to the system users.

Response to Arguments

13. Applicant's arguments filed on 6/13/03 have been fully considered.
- i) Applicant argues, on page 15, regarding the limitations "comparison unit" and "textual directory unit". New prior art is referenced and new grounds of rejections necessitated by the amendments have been stated above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this application and office action should be directed to the examiner Ming Chow whose telephone number is (703) 305-4817. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang, can be reached on (703) 305-4895. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is (703) 306-0377. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to TC2600's Customer Service FAX Number 703-872-9314.

Patent Examiner

Art Unit 2645

Ming Chow

FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

